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TWELVE NEW DIPTERA

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Most of the new species described in this paper have been received for determination during the past year, the descriptions being published at this time in order that the names may be available to those submitting the specimens. Unless otherwise stated the types are in The American Museum of Natural History.

Dolichopidæ

Syntormon Loew

This genus has been revised by Mr. M. C. Van Duzee[1] and the synonymy of *Synarthrus* Loew accepted. Mr. Van Duzee would maintain *Parasyntormon* Wheeler as a separate genus on the basis of the shape of the face of the females, but it seems to me that the character is not sufficiently distinctive to be of generic value. In some cases the males can be assigned to their proper groups, but more often this cannot be done. The logical thing to do, even though it may not be the scientific thing, is to unite the two groups into a single, easily recognized genus and thus eliminate a great deal of uncertainty.

The species which I describe below is probably a *Syntormon* in the strict sense, and for that reason I compare it with species included in the genus by Van Duzee. In his table of species it traces to *simplicitarse* Van Duzee but the wholly black antennæ and palpi, brown proboscis and tarsi, etc., will at once distinguish it. The two species are, actually, very dissimilar. The antennæ are of much the same shape, although the thumb-like projection of the second segment is much shorter in *vanduzeei* than in *simplicitarse*. Incidentally, it appears that the figure of the antenna of *simplicitarse* is inverted, although the shape of the first segment would seem to indicate otherwise.

Syntormon vanduzeei, new species

Green, legs reddish yellow, the tarsi mostly brown. Length, 3 mm.

Male.—Face narrow, evidently brown or blackish; front shining violaceous, the borders narrowly green; orbital cilia whitish, the upper ones black. Palpi blackish.

[1] 1925, Trans. Amer. Ent. Soc., I, pp. 275–287.

Antennæ black, the second segment rounded apically, the third shaped as in *simplicitarse* Van Duzee; arista as long as the third segment; first segment bare above.

Mesonotum with thin brownish pollen, the sides and pleura whitish pollinose; hair of the propleura white; scutellum with one pair of strong bristles, otherwise bare.

Legs reddish yellow; posterior four coxæ green, whitish pollinose; tarsi, with the exception of the basal two-thirds of the basal segment, brown. Anterior and posterior femora with normal hair. Middle femora on the basal third of the ventral surface with a row of six increasingly strong black bristles and near the middle with three very much weaker ones; the longest bristle is about equal in length to the height of the femur. Anterior tibiæ with a single weak bristle situated on the dorsal surface; middle tibiæ with two anteroventral, three anterodorsal and two posterodorsal bristles; posterior tibiæ with three or four anterodorsal and posterodorsal bristles and with conspicuous short, bristly hair. Anterior four tarsi simple, the basal segment of the posterior pair very slightly curved and bearing short bristly hair, near the apex with two or three erect bristles which are conspicuous.

Wings cinereous hyaline, the veins brown. Squamæ yellow, with brown border and brownish yellow cilia. Halteres yellow.

Abdomen with the sides and venter thinly pale pollinose and bearing pale pile; dorsum black-haired; incisures narrowly blackish. Genitalia hidden, the exposed part brown.

TYPE.—Male, Arnprior, Ontario, August 19, 1930 (Curran).

The specimen was taken resting on low vegetation along the banks of a long, very narrow inlet, the banks of which were narrowly bordered with clay.

Rhaphium furcifer, new species

Figure 3

The genital lamellæ are furcate, the two branches of almost equal proportions; posterior femora black with the basal fifth reddish except on the ventral surface; posterior tibiæ reddish yellow with the basal fourth blackish; face white. The structure of the antennæ is similar to those of *nigrociliatum* Curran and the genital lamellæ are rather similar but are longer before the furcation. In the table of species, *furcifer* traces to *orientale* Curran, but the furcate genital lamellæ distinguish it; since the posterior femora are broadly pale basally it might trace to *grande* Curran, but that species also has unforked lamellæ. Length, 5 mm.

MALE.—Face narrow, white; front green, rather thickly cinereous-white pollinose, the ground color showing through; occiput with cinereous-white pollen and white pile, the occipital cilia black. Palpi small, black, their apices yellowish and with a few fine yellowish hairs. Antennæ black; third segment about as long as the front, triangular; arista slightly longer than antenna.

Thorax green; mesonotum with quite evident brownish pollen, shining posteriorly and laterally; notopleura and pleura cinereous-white pollinose. Six pairs of dorsocentral bristles, the acrosticals becoming long posteriorly; scutellum with a pair of strong lateral bristles and four strong hairs. Propleural pile white.

Legs reddish yellow, the middle pair and anterior tibiæ pale yellowish. Coxæ black, whitish pollinose and pilose, the middle and posterior pair each with a strong

pencil of black hair, the middle ones also with a row of black bristles on the apex. Anterior femora mostly brown above, black-haired; behind with long whitish hair, the hair below short and whitish on the basal half and with a double row of rather short, whitish cilia on the basal half of the posteroventral surface, the cilia not as long as the height of the femora. Posterior femora black, the basal fifth reddish yellow except below, the hair wholly black; middle femora with weak bristle before the apex in front and behind. Tibiæ each with two anterodorsal and two posterodorsal bristles, the middle pair with two ventral bristles near the apical fourth.

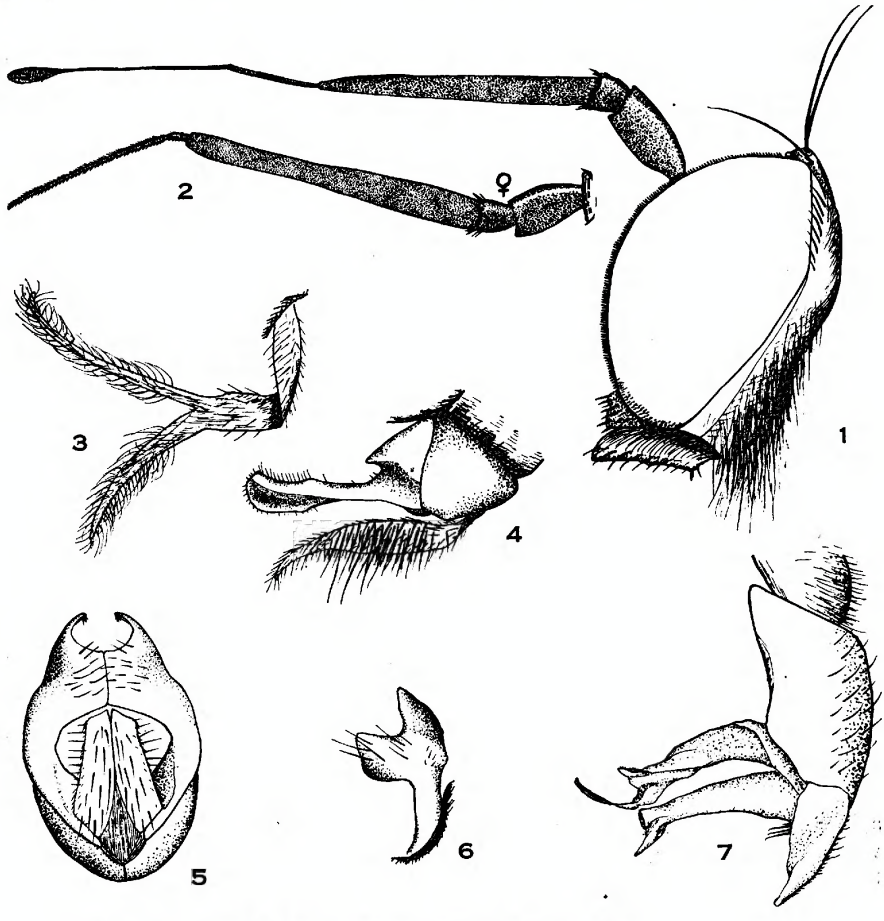

Fig. 1. *Rhaphium browni*, new species. Head of male.
" 2. *Rhaphium browni*, new species. Antenna of female.
" 3. *Rhaphium furcifer*, new species. Genital lamella of male.
" 4. *Rhaphium septentrionale*, new species. Lateral view of male genitalia.
" 5. *Cordilura browni*, new species. Ventral view of male genitalia.
" 6. *Cordilura masconina*, new species. Outer forceps of male genitalia.
" 7. *Ephydra salina*, new species. Lateral view of male genitalia.

Front tarsi yellowish, the two apical segments black, the first segment as long as the remaining segments combined, enlarged at the apex; middle tarsi reddish yellow with the two apical segments black, the first segment with a row of short, black bristles on the basal half of the under surface; basal two segments of the posterior tarsi brownish yellow, their apices, and the apical three segments wholly black. Posterior tibiæ with the apical fifth or more blackish or brown.

Wings with cinereous tinge, rather broad, conspicuously convex between the tips of the anal and sixth veins. Squamæ yellow, their cilia white. Halteres yellow.

Abdomen shining green, the dorsum more or less bronzed, the sides and venter cinereous pollinose. First segment, sides of the abdomen and the venter whitish-yellow pollinose. Genitalia black, cinereous pollinose, the lamellæ yellowish brown, with brownish-yellow hair, furcate on the apical half, the arms of almost equal size.

TYPE.—Male, Tabatiere, Quebec, July 11, 1929 (W. J. Brown); in the Canadian National Collection.

Rhaphium septentrionale, new species

Figure 4

Related to *effilatum* Wheeler but much larger and with three anteroventral and posteroventral bristles apically on the middle femora. Length, 6.5 mm.

MALE.—Face narrow, white; front shining green, from posterior view thinly brownish-gray pollinose; occiput green, grayish-white pollinose, the pile white, the occipital cilia black. Palpi black, of ordinary shape, sparsely black-haired, the anterior border with grayish-yellow pollen and hair. Antennæ black, the third segment subtriangular, gently convex above, about half as long as the face; arista twice as long as the third segment, the apex flattened and slightly broadened. Hair on the eyes black except on the posterior fourth.

Thorax bright green; mesonotum very thinly brownish pollinose; pleura whitish pollinose. Seven dorsocentral bristles; propleural pile white.

Legs reddish yellow, the tarsi except the basal segment of the anterior four, apical fourth of the posterior tibiæ and the apical fifth of the posterior femora except below, black. Coxæ black, cinereous pollinose, white pilose, the middle pair with black bristly hair apically in front except toward the inner edges, behind with thick whitish hair; posterior pair with numerous hairs on the outer surface, the anterior pair without bristles. Femora with short black hair, the anterior four with very short, fine, pale hair beneath; anterior femora with one anterior and three posterior bristles apically, the middle pair with three toward each ventral surface, the posterior pair with two anterior and one posterior. Anterior tibiæ with four anterodorsal and posterodorsal bristles, the middle pair with three, the posterior pair with five. First segment of the front tarsi a little longer than the following two combined, broadened at the apex.

Wings strongly tinged with dark brown. Squamæ yellowish, with white cilia. Halteres yellow.

Abdomen green, the sixth segment purple, the others bronzed on the basal half, thinly whitish pollinose on the posterior half, the sides conspicuously pollinose; venter cinereous-white pollinose. Hair black, the first segment, sides of the second and third and the basal three sternites white-haired. Genitalia black, moderately

grayish-brown pollinose; outer lamellæ long, strap-like, tapering apically, the hair long, especially along the outer edge.

FEMALE.—Face wide, silvery gray; front bronzed or coppery; palpi large, yellowish-brown pollinose, the hair all black; third antennal segment smaller. Posterior femora with an elongate brown spot on the apical fifth of the upper surface, their tibiæ with at most the apical sixth blackish; anterior coxæ with several fine black bristles apically. Abdomen less extensively dark, more brightly shining green or bronzed, the pale pollen less obvious.

TYPES.—Holotype, male, and allotype, female, Natashquan, Quebec, August 8, 1929; paratype, female, August 5, 1929 (W. J. Brown). Type in the Canadian National Collection; paratype in The American Museum of Natural History.

Traces to *effilatum* Wheeler in the key (1926, Trans. Roy. Canadian Inst.) but *effilatum* is much smaller, has longer genital lamellæ and less distinctly broadened arista in the male, and only five dorsocentral bristles.

Rhaphium browni, new species

Figures 1 and 2

Related to *foliatum* Curran and *insolitum* Curran; distinguished from both these species by the black median and posterior femora; traces to *banksi* Van Duzee in the key (1926, Trans. Roy. Can. Inst., XV, pp. 252–260) but the third antennal segment is longer than the height of the head in both sexes, the arista a little longer than the third antennal segment and, in the male, ending in a small lamella. Length, 4.75 to 5 mm.

MALE.—Face rather narrow, silvery white, the sides parallel on the lower half; front shining black; occiput greenish black above, black-haired; lower half of the occiput green, whitish pollinose and pilose. Palpi rather small, deep black, truncate at the apex, their short hair black. Antennæ black, elongate; first segment unusually long and broadened, convex on its upper edge, the lower edge gently convex; second segment one-third as long as the first; third segment about equal to the height of the head, very gently tapering from the base to the apex, the base not wider than the second segment; arista as long as the second and third segments combined, terminating in an elongate-oval lamella, the basal section almost one-half as long as the apical section. Eyes with white hair which, however, appears black in some views.

Thorax dark green, the mesonotum blackish and somewhat dulled by brownish pollen except on the broad sides, the pleura cinereous pollinose. Acrostical hairs in two rows; six pairs of dorsocentral bristles; one pair of scutellar bristles, the margin with short hairs. Propleural hair whitish.

Legs black; anterior four tibiæ yellowish, their tarsi yellowish at the immediate base; coxæ cinereous pollinose. Anterior coxæ white-haired, with two black bristles near the apex on the outer side; middle coxæ with a large pencil of short white hair at the apex, preceded by a few short, black bristles and with two black bristles toward the apex on the outer side; posterior coxæ with a row of whitish hairs on the outer surface, near the middle with a strong black bristle, the anterior apex with a few short black bristles, without a pencil of hairs. Anterior femora with short black hair, on the basal third of the ventral surface with cinereous pollen and very short, fine white hair; middle femora with reddish apices, with two bristles on the anterior and posterior surfaces near the apex, the hair black, the basal third of the posterior surface

with cinereous pollen and longer whitish hair; posterior femora with short black hair and wholly without preapical bristles. Anterior and middle tibiæ each with three anterodorsal and posterodorsal bristles, the posterior pair with five anterodorsal and three posterodorsal bristles. Basal segment of the anterior tarsi strongly widened at the apex, as long as the two following segments combined.

Wings grayish, with brown tinge in front and along the veins. Squamal cilia white. Halteres yellow.

Abdomen dark green, the venter cinereous pollinose; hair and bristles black, the hair white on the sides of the basal half and on the venter. Genitalia black, the large, broad, foliate, brown posterior lamellæ tapering from near the base to the broad, rounded apex; their hair short and black; inner appendages reddish yellow.

FEMALE.—Face wide, silvery; front steel-blue with purple reflections; palpi large, appressed against the haustellum, subtriangular, thinly brown pollinose, the sparse hair black; mouth-parts very large, cinereous pollinose; arista simple. Posterior femora reddish on the basal half to two-thirds; middle coxæ without thorn, with black hair apically; anterior tarsi simple; wings more strongly tinged with brown. Abdomen dark green, more vivid in color, with more or less bronzed reflection.

TYPES.—Holotype, male, allotype, female, and one female paratype, Natashquan, Quebec, August 7, 1929 (W. J. Brown). Type in Canadian National Collection; paratype in American Museum of Natural History.

The female traces to couplet 2 in the key to females, disagreeing with the first alternative by having the posterior femora reddish on the basal half. It resembles *lugubre* Loew in having the arista less than half as long as the third antennal segment but differs in having the middle femora black. In *lugubre* the arista is about one-third as long as the third antennal segment, in *browni* three-eighths as long.

Rhaphium vanduzeei Curran

1926, Trans. Roy. Canadian Inst., XV, p. 253; 1927, XVI, p. 104.

I have before me a male and female which I believe are this species. They show slight differences from the description: the long, fine hairs on the basal half of the ventral surface of the middle femora are black instead of pale; the anterior four femora are black except on the apical fifth; several of the squamal cilia are black; and there is a black bristle on the outer side of the posterior coxæ. The female agrees perfectly with the description of that sex. I do not have a type specimen before me so am unable to make comparisons in order to discover whether there are other differences. It seems likely that the differences mentioned are within the limits of natural variation, and additional specimens from the same locality might produce intermediate forms.

R. vanduzeei was originally described from Indiana and has not since been recorded. The specimens mentioned above were taken at Arnprior, Ontario, on August 19, 1930, in the same place as *syntormon*

vanduzeei. It is worthy of note, however, that the male was taken at honeydew on milkweed. It is not uncommon to find species of *Condylostylus*, *Gymnopternus* and *Dolichopus* at honeydew, but this is the first occasion upon which I have found specimens of *Rhaphium.*

Ephydridæ

Ephydra salina, new species

Figure 7

Related to *hians* Say but with dark brown pollen on the face and usually with mostly yellowish-red tibiæ and tarsi. Length, 3.5 to 5 mm.

MALE.—Head longer than high, metallic greenish, brownish-gray pollinose, the face dark brown; frontal orbits brown pollinose, with three or four pairs of divergent orbitals, the shining part of the front with a pair of strong converging bristles and scattered black hairs. Oral border with a row of rather strong bristles, the bristles below the facial ridge not as long as those on the oral border. Proboscis gray pollinose; palpi greenish, with cinereous pollen. Antennæ black; arista short, strongly swollen on less than the basal half, the apical half slender.

Mesonotum greenish or bronzed, rather thinly cinereous pollinose; pleura brownish-yellow pollinose above, cinereous below. Six pairs of dorsocentral bristles, the anterior pair weak. Scutellum with four marginal bristles, and scattered hairs, metallic dark greenish in ground color, with more or less bronzed reflections. Mesopleura with three or four bristles posteriorly.

Legs metallic greenish, the trochanters, apices of the coxæ, tips of the femora, basal third or more of the tibiæ and their apices (rarely almost wholly) and the basal two or three tarsal segments, reddish yellow; the tarsi variable in color, but always reddish basally, the first segment of the anterior pair with dense hair posteroventrally beyond the middle and distinctly widened at this point.

Wings with faint brown tinge, the veins brown, those on the basal half of the wing more or less yellowish. Squamæ yellow, with yellowish fringe. Halteres yellow.

Abdomen metallic greenish, with bronze reflections laterally, moderately cinereous pollinose; hair black.

FEMALE.—Bristles on lower part of ovipositor rather short and fine.

TYPES.—Ten males and eleven females, Cherokee, Okla., July 18, and October 18, 1930 (R. D. Bird). The holotype and allotype (July 18) are in The American Museum of Natural History; paratypes in United States National Museum and University of Oklahoma.

The males, taken on October 18, show certain differences: the legs are greenish with only the bases of the tibiæ reddish; the facial pollen is a very dark brown; and the wing veins are wholly brown. There are no other differences and these represent only a darker form of the same species. The male genitalia are identical in the two forms.

E. salina is closely related to *hians* Say but that species has a cinereous-pollinose face. The original description of *hians* calls for a species with a bluish front, but the species going under the name of *hians*, in

collections, has a green front and may not be the same, although teneral specimens are often inclined to be bluish.

Borboridæ

Borborus aptus, new species

Related to *B.* (*Gymnometopa*) *clunicrus* Duda but at once distinguished by the absence of an anteroventral bristle on the middle tibiæ, much longer preapical bristle on the posterior tibiæ, dark reddish sides of the mesonotum, etc. Length, 3 mm.

MALE.—Head rusty reddish, shining, the occiput thinly gray pollinose; vertex a little darkened from anterior view. Frontal triangle not defined, the median rows of bristles not conspicuous, two pairs of weak orbitals; outer verticals as strong as the verticals. Oral vibrissæ elongate, fine. Cheeks only one-fourth as wide as the eye-height; eyes rather oval. Proboscis brownish red. Antennæ luteous; third segment somewhat pointed above; arista black, long pubescent.

Thorax shining castaneous or ferruginous, the mesonotum black, the sides broadly, and sometimes a broad median vitta reddish, the scutellum similarly colored. Hair blackish, moderately long; acrostical hairs in two rows; three pairs of dorsocentral bristles, one in front of the suture; four scutellar bristles, the apical pair arising from small tubercles, the scutellum otherwise bare.

Legs rusty yellowish; apical half or more of the posterior femora, posterior tibiæ except the broad base, apical third or more of the anterior tibiæ, and the basal segment of the posterior tarsi, brownish; tarsi mostly pale yellow. Legs rather hairy, the tibiæ with the hair partly sub-appressed and partly erect; posterior tibiæ with the preapical bristle decidedly longer than the very much thickened tibiæ, the apical spine long and strong. Apex of the first segment of the anterior tarsus produced anteriorly to form a conspicuous, apically rounded spur.

Wings cinereous hyaline, the veins yellowish. Halteres pale yellow.

Abdomen with the first tergite represented only at the sides, the second normal in shape, the third very greatly reduced, the others not at all or incompletely developed. Genitalia large, reddish brown. Sternites normal, the basal ones narrowest. Second tergite rather cinereous pollinose.

FEMALE.—Front tarsi simple; second tergite almost normal, the three following much narrowed, each a little narrower than the preceding, brownish red.

TYPES.—Holotype, male, allotype, female, and two female paratypes, Cameroon, West Africa (Thaxter No. 2732).

Borborus clunicrus Duda was described from East Africa and I consider two females from Liberia (J. Bequaert) as belonging to the species, although they both have the thorax shining black. They also possess a distinct anteroventral bristle on the middle tibiæ, a character lacking in *aptus*. Duda states that the posterior tibiæ of *clunicrus* bear a long preapical bristle, but in the specimens before me this bristle is not as long as the tibial thickness.

Afroborborus, new genus

Related to *Borborus* Meigen but at once distinguished by the greatly elongate, laterally concave scutellum, weak apical spur on the posterior tibiæ, etc. In both sexes the tergites are not developed beyond the second; wing venation complete. The scutellum bears one or two weak, marginal bristles near the middle on either side, but lacks any other hair. The thorax bears only weak bristles: one in front and one behind on the notopleura, one at either end of the posterior calli and a presutural; propleura setose. Head as in *Borborus*.

GENOTYPE.—*Afroborborus tumidus*, new species.

Afroborborus tumidus, new species

Reddish and reddish yellow, the pleura brownish red; pectus and tergites blackish. Length, 3.1 mm.

MALE.—Head shining reddish, the occiput thinly cinereous pollinose; hair and bristles black; interfrontalia with three inwardly directed, fine, short bristles on either side; two pairs of fine, divergent orbitals; ocellars absent; outer verticals as long as verticals. Face concave, the oral margin thin, strongly projecting; oral vibrissæ long; no long bristle on posterior part of the cheeks, which are about one-third as wide as the eye-height. Eyes short oval. Antennæ with the two basal segments and arista brownish; third segment elliptical, obtusely pointed at upper apex, the arista arising just before the tip.

Prothorax, mesonotum and broad base of the scutellum rusty reddish, rather thinly reddish-brown pollinose; pleura shining ferruginous to reddish brown, the pectus black. Acrostical hairs in two rows. Scutellum decidedly longer than wide, obtuse apically, the sides concave on the sub-basal third; apical third brown in color.

Legs reddish yellow; middle tarsi black, the posterior pair with the apical segment brown; apical four segments of the front tarsi whitish. Hair fairly abundant, the tibiæ with some erect hairs, without bristles except the weak preapicals. Spur of the posterior tibiæ very small.

Wings cinereous hyaline; fifth vein continued to the wing margin; second vein strongly curved forward apically. Squamæ black ciliate. Halteres pale yellow.

First two abdominal segments black, cinereous-brown pollinose; genitalia similarly colored; remainder of abdomen yellowish, the tergites not hardened, the sternites but poorly defined; hair black.

FEMALE.—Legs wholly reddish yellow; abdomen wholly yellowish beyond the second segment.

TYPES.—Holotype, male, and allotype, female, Cameroon, Thaxter No. 2734.

Diopsidæ

Diopsis globosa, new species

Differs from *macquarti* Guérin in having the abdomen wholly shining reddish-brown or black; in *macquarti* the fourth, fifth and sixth segments are cinereous pollinose. Length, 5.5 to 7 mm.; width of head, 4 to 5.75 mm.

MALE.—Head dark reddish; front with a broad median area which usually shows weak, transverse, curved grooves, and on either side with a large area, beginning in front, bearing fine, irregular longitudinal ridges. Bristle of the eye-stalks minute,

the postocular bristle strong; eye-stalks black apically. Antennæ reddish. Face wider above than below, transversely striate, armed below with small, perpendicular teeth; in profile more strongly convex below, the lowest fourth of the face most prominent. Hair short and fine.

Thorax black, moderately cinereous pollinose, sometimes slightly brownish. Scutellum and spines brown or reddish brown.

Legs reddish yellow or reddish, the apical third of the posterior femora and the posterior tibiæ more or less reddish brown. Anterior femora moderately swollen, with black ventral setæ on the apical three-fifths. Middle and posterior femora with small apical spines.

Wings hyaline and brown; behind the tip of the first vein with a narrow transverse spot which is weakly connected through the first basal cell with the brown surrounding the end of the anal cell. Beyond the clear band at the middle of the wing is a very large, interiorly and exteriorly convex brown area which reaches both the anterior and posterior border of the wing very broadly and extends beyond both the anterior and posterior cross-veins. The hyaline cross-band beyond the median brown field is relatively narrow and is separated from the grayish or very pale brownish apex of the wing by a narrow, irregular brown band, the anterior section of which, lying in front of the second vein, is not connected with the posterior part. Halteres pale yellow.

Abdomen varying from black to ferruginous, wholly shining, the sides of the second segment basally more or less transversely aciculate. The abdomen is cylindrical basally and globosely enlarged on the apical half, although, as a rule, in the male the enlargement is more oval than in the female.

Female.—The abdomen is more globosely enlarged apically.

Types.—Six specimens of each sex from Cape Colony: Barberton, August 1913 and May 21, 1914 (L. S. Hardenberg); Worcester, May 20, 1914, and Barberton, da Kaap Farm, October 6, 10, 1919 (H. K. Munro); male, Kissanter, Congo, September 1920 (P. Vanderijst). The holotype, male, and allotype were taken at Barberton on October 6, 1919. Paratypes are in the Musée du Congo Belge and Mr. Munro's collection.

The specimen from the Congo has the middle and hind femora much darker than in the South African examples.

Agromyzidæ

Phytomyza dura, new species

Black, with cinereous pollen, the face, cheeks, front, knees and halteres yellowish, Length, 2 mm.

Female.—Face and cheeks yellowish, the orbits cinereous pollinose, front wider than long, yellowish, the vertex black; orbits broad, cinereous pollinose; three pairs of frontal bristles, the anterior pair more or less convergent; outside the frontals with a row of tiny setulæ; ocellars, postocellars, verticals and outer verticals strong. Occiput black or brown in ground color, cinereous pollinose, the hair and occipital cilia black. Cheeks one-third as wide as the eye-height, the lower border with a row of fine bristles. Vibrissæ moderately strong. Palpi black or brown. Antennæ

black, rather small; third segment orbicular, with obscure pubescence; arista thickened on the basal two-thirds, tapering apically, not conspicuously pubescent.

Thorax rather thickly cinereous pollinose; four pairs of strong dorsocentrals and five to seven pairs of acrostical hairs. Scutellum with two pairs of strong marginal bristles.

Legs blackish or brown; coxæ cinereous pollinose; apices of the femora and the narrow bases of the tibiæ reddish yellow.

Wings cinereous hyaline; veins brown, at the base yellowish brown. Auxiliary vein weak on most of its length; second, third, and fourth costal sections as 3–1–1½ to 2. Squamæ with blackish border and fringe. Halteres whitish yellow.

Abdomen blackish, thinly cinereous-brown pollinose, sub-shining, the extreme apices of the segments appearing yellowish from posterior view. Ovipositor large, shining black. Hair and bristles black.

Types.—Holotype, female, and three female paratypes, Thunder Bay and Thunder River, Quebec, June 11, 1929 (W. J. Brown). The type is in the Canadian Nation Collection, paratypes in The American Museum of Natural History.

This species traces to *lactuca* Frost in Frost's key (Cornell University Agric. Exp. Sta. Mem. 78, pp. 60–62) but differs in many respects. *P. lactuca* has two rows of setæ outside the frontal bristles, the front about as broad as long, the third antennal segment is broadest toward the apex and is thickly long whitish pubescent, etc.

Muscidæ

Cordilura masconina, new species

Figure 6

Related to *latifrons* Loew but with yellow palpi, longer front and darker pollen on the mesonotum. Length, 5 to 5.25 mm.

Male.—Face, cheeks, and frontal vitta reddish yellow, the parafrontals of the same color anteriorly; head cinereous-white pollinose. Occiput black. About ten pairs of frontal bristles; ocellars moderately long; verticals long, the outer verticals well developed. Occipital hair whitish on the lower half. Cheeks narrow; face strongly receding below, the vibrissæ strong. Palpi yellow, pale-haired, the apical bristle black. Proboscis black. Antennæ black, the second segment reddish dorsally beyond the bristle; third segment about as long as the second, rounded apically, the upper apex more sharply rounded; arista with moderately long hair on the basal half.

Thorax black, brownish-gray pollinose, in some lights with four darker vittæ. Acrostical hairs rather coarse, arranged in a single, irregular row; dorsocentrals 2–3; scutellum with one pair of strong bristles, a pair of apical bristly hairs and a few hairs toward either side. Pleural hair pale yellowish, the bristles black.

Legs black, the tibiæ and basal two tarsal segments reddish yellow; coxæ and femora cinereous pollinose. Hair black, pale yellowish on the coxæ and ventral surfaces of the femora.

Wings cinereous hyaline. First vein with several setulæ apically. Squamæ and halteres yellowish.

Abdomen black, cinereous pollinose, less thickly so on the dorsum. Fifth sternite cleft V-shaped, the broad, apically rounded lobes lying parallel to each other, very

thinly pollinose. Genitalia black, cinereous pollinose. Outer forceps shining brown, on the inner side with a broad, truncate lobe, the apex of the forceps rather pointed (figure 6). Abdominal hair and bristles black, the venter with pale yellowish hair.

TYPES.—Holotype, male, and three male paratypes, Masconin, Quebec, June 20, 1929. Type in the Canadian National Collection; paratypes in The American Museum of Natural History.

In some respects this species is intermediate between *Cordilura* Rondani and *Acicephala* Coquillett. The face is almost as much receding as in *Acicephala polita* Coquillett, but the eyes are less oblique, the occiput being very considerably narrower; the front bears more numerous bristles than *polita* and the head is slightly shorter. Were it not for the narrow occiput I should be inclined to place the species in *Acicephala*.

Cordilura browni, new species

Figure 5

Black, cinereous pollinose; legs yellowish. Length, 5.25 mm.

MALE.—Face and cheeks whitish; front orange, the parafrontals on the upper three-fifths and the ocellar triangle black in ground color. Seven pairs of frontals; ocellars of moderate length; verticals long, the outer verticals poorly developed. Front twice as long as wide, gently narrowing anteriorly, gently convex in profile. Occiput black, cinereous pollinose; whitish below the level of the eyes, pale yellow-haired on the lower half. Face only slightly receding below, the vibrissæ strong. Proboscis rusty reddish. Palpi very pale yellow, with two or three long yellowish hairs on the outer margin, a black apical bristle and several very short black hairs on the dorsal surface. Antennæ pale orange, the third segment black on about the apical half; arista black, with moderately long rays.

Thorax black in ground color, cinereous pollinose, the mesonotum without vittæ. Acrosticals short, in two rows; dorsocentrals 2–3, both the anterior presutural and postsutural short; one intra-alar present; one pair of strong scutellars and three or four hairs toward either side (probably a pair of weak apicals present since there appear to be two scars, indicating that they have been broken off). Hair of the pleura pale yellowish.

Legs reddish yellow; posterior four coxæ reddish, their outer surfaces brown. Anterior coxæ, anterior femora below and the posterior four femora on the base of the under surface, pale yellow pilose, the hair and bristles on the remainder of the legs black. Tarsi becoming brownish apically.

Wings cinereous hyaline, tinged with luteous anteriorly and basally, the veins partly luteous. First vein wholly bare. Squamæ and halteres yellow.

Abdomen black, moderately cinereous pollinose, the dorsal hair and bristles black; first segment, lateral margins and venter with pale yellowish hair. Lobes of the fifth sternite broadly reddish basally, shining brown apically, their sides almost parallel, their apices broadly rounded, the hair partly black and partly yellow. Posterior and outer forceps reddish yellow, the outer pair ending in a small, flat, narrow process before which the lobes are very broadly, truncately widened on the inner sides (figure 5).

TYPE.—Male, Bradore Bay, Quebec, July 27, 1929 (W. J. Brown). The type is in the Canadian National Collection.

Mydæa triseta, new species

This species resembles *Cyrtoneuropsis veniseta* Stein, having very similar wing markings, but since it bears only three pairs of postsutural dorsocentral bristles and has the wing veins bare it is readily distinguished. In Stein's key it traces to *spiloptera* Wiedemann but that species has the prosternum haired and belongs to *Cyrtoneura* Giglio-Tos. Length, 6 to 7.5 mm.

MALE.—Head blackish, cinereous pollinose; cheeks reddish above; frontal vitta brownish red, obliterated for a short distance above the middle; two pairs of strong frontals in front, and five or six very short ones; ocellars long; verticals very weak; occiput black-haired, the hair yellowish and fine behind the oral opening; cheeks one-seventh as wide as eye-height. Palpi reddish. Antennæ orange. Eyes sparsely short-haired. Arista long plumose.

Thorax brown, cinereous pollinose; mesonotum with four rather narrow brownish vittæ, the outer ones interrupted at the suture; scutellum darker in the middle. Dorsocentrals 2–3, all strong; anterior intra-alar present; prealar long and strong; sternopleurals 1–2; hypopleura without hairs.

Legs blackish; apices of the femora and the tibiæ reddish. Anterior tibiæ without bristles; middle pair with one posterior, situated beyond the middle; posterior tibiæ with two anterior, two anterodorsal and one posterodorsal, the latter not longer than the others and situated at the apical third. Posterior femora with an entire anterodorsal row of bristles and three near the apex on the anteroventral surface, the middle one strong.

Wings cinereous hyaline, with brown markings as follows: the costal cell beyond and behind the auxiliary vein, broad clouds surrounding the cross-veins, a brown cloud extending from the costa to behind the second vein beyond the posterior cross-vein and clouds along the third and fourth veins beyond the apex of the second vein. Third vein gently arched forward, almost parallel with the fourth vein for some distance before its apex, the tip itself curved forward; fourth vein practically straight. Third vein with two setæ at the base above and three or four below. Squamæ yellowish. Halteres yellowish, with reddish knob.

Abdomen brown, cinereous pollinose, somewhat tessellate, but usually displaying an elongate oval spot on the second and third segments forming a longitudinal vitta. The hairs arise from dark spots. Third and fourth segments each with a row of marginal bristles, the fourth with a row of discals. Basal sternite bare.

TYPE.—Male, Chapada, Brazil (Williston Collection).